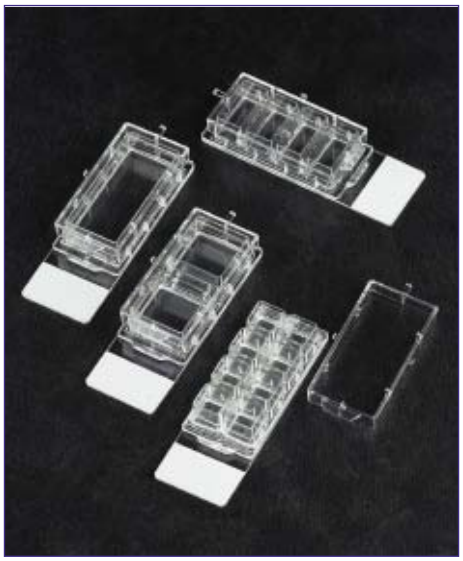
IWAKI Cell Biology



Chamber Slides

- Polystyrene chamber attached to a glass microscope slide by means of a non-toxic silicone rubber
- Ideal for the culture, fixation, staining and observation of cells all on one slide
- Independent chambers help simultaneous multi-cultures with low risk of cross-contamination
- Plastic chambers can be removed following culture
- Supplied sterile in easy to open tray packaging

Product Code	Description	No of Chambers	Chamber Capacity (ml)	Chamber Dimensions (mm)	Material Chamber/Slide	Sterility	Inner Pack Qty	Case Qty
5702-001	Chamber slide	1	10	19 x 44	PS/Glass	EO	10	20
5712-002	Chamber slide	2	4.5	19 x 19	PS/Glass	EO	10	20
5722-004	Chamber slide	4	2	9 x 19	PS/Glass	EO	10	20
5732-008	Chamber slide	8	1	9 x 9	PS/Glass	EO	10	20

Do not sterilise in autoclave
Do not use with organic solvents

Dishes, Tissue Culture Treated

- Manufactured from optically clear, premium grade, non-toxic virgin polystyrene
- Assured sterile by gamma irradiation and certified non-pyrogenic to less than 0.5EU/ml
- Feature a special tissue culture (TC) treatment that ensures optimum cell attachment and growth
- Stacking rings for stability and vents for improved gas exchange
- An easy grip feature on all 35, 60, and 150mm dishes facilitates ease of handling
- Thick, flat bases enhance optical clarity and reduce bowing. Dish lids are untreated to minimise condensation

Product Code	Description	OD x Height (mm)	Growth Area (cm^2)	Sterility	Inner Pack Qty	Case Qty
3000-035	Tissue culture dish	35 x 10	9	IRR	10	300
3010-060	Tissue culture dish	60 x 15	21	IRR	10	300
3020-100	Tissue culture dish	100 x 20	55	IRR	10	300
3030-150	Tissue culture dish	150 x 20	148	IRR	5	60

Dishes, Non-Treated

- Manufactured from optically clear, premium grade, non-toxic virgin polystyrene
- Assured sterile by gamma irradiation and are certified non-pyrogenic to less than 0.5EU/ml
- Ideal for suspension cultures or plant cell culture
- Stacking rings for stability and vents for improved gas exchange
- An easy grip feature on all 35, 60, and 150mm dishes facilitates ease of handling
- Thick, flat bases enhance optical clarity and reduce bowing

Product Code	Description	OD x Height (mm)	Growth Area (cm^2)	Sterility	Inner Pack Qty	Case Qty
1000-035	Tissue culture dish	35 x 10	9	IRR	10	300
1010-060	Tissue culture dish	60 x 15	21	IRR	10	300
1020-100	Tissue culture dish	100 x 20	55	IRR	10	300
1030-150	Tissue culture dish	150 x 20	148	IRR	5	60

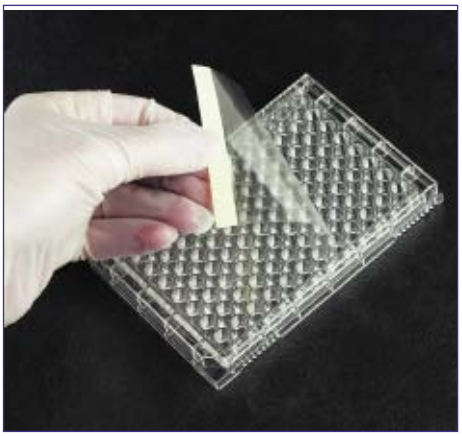
For our extensive range of glass based products for use with confocal microscopes, please refer to page 77 & 78

ELISA/Assay Plates, High Binding

- Manufactured from high clarity virgin polystyrene
- Flat or round base well designs
- Uniform plate thickness for precise optical clarity and low background interference
- Alpha-numeric labelling for fast, accurate identification and measurement
- Chimney well design minimises the risk of cross contamination
- Low evaporation lid or sealing film available
- Compatible with standard microplate washers, dispensers and readers

Product Code	Description	Base	Material	Well ID x Depth (mm)	Well Capacity (ml)	Sterility Qty	Inner Pack	Case Qty
3801-096	ELISA plate 96 well	Flat	PS	6.4 x 10.8	0.35	IRR	10	50
3802-096	ELISA plate 96 well	Round	PS	6.9 x 10.8	0.35	IRR	10	50
1803-096	Lid for 3801, 3802	-	PS	-	-	NS	1	50
1804-096	Sealing film (83 x 134mm)	-	PET	-	-	NS	50	50

ELISA/Assay Plates, Low Binding



- Flat or round base well designs
- Uniform plate thickness for precise optical clarity and low background interference
- Alpha-numeric labelling for fast, accurate identification and measurement
- Chimney well design minimises the risk of cross contamination
- Low evaporation lid or sealing film available
- PVC assay plate is a flexible alternative to polystyrene and provides faster transfer of heat for PCR reactions
- Compatible with standard microplate washers, dispensers and readers

Product Code	Description	Base	Material	Well ID x Depth (mm)	Well Capacity (ml)	Sterility Qty	Inner Pack	Case Qty
3881-096	Assay plate 96 well	Flat	PS	6.4 x 10.8	0.35	NS	10	50
3882-096	Assay plate 96 well	Round	PS	6.9 x 10.8	0.35	NS	10	50
3883-096	Assay plate 96 well, Flexible	Flat	PVC	6.4 x 10.8	0.35	NS	10	50
1803-096	Lid for 3881, 3882	-	PS	-	-	NS	1	50
1804-096	Sealing film (83 x 134mm)	-	PET	-	-	NS	50	50

For our extensive range of glass based products for use with confocal microscopes, please refer to page 77 & 78

For information on specific application for each well shape and the details on the binding capacity of the Iwaki ELISA plates please refer to page 90 of the Technical Information section

Filters, Syringe

- Tissue culture grade filters have been designed to meet the exacting standards of today's cell biologists
- Assured sterile by gamma irradiation and certified non-pyrogenic to less than 0.5EU/ml
- Choice of filter housing and membrane pore size to satisfy most filtration requirements
- Cellulose acetate membrane that is both detergent free and low binding
- Transparent acrylic membrane housing available for improved visual inspection
- Membrane support permits positive or negative filtration
- Designed with minimum dead space to reduce sample loss
- Supplied in individual blister packs and ready for use
- PES membrane available for faster flow rates and low protein binding
- Recommended for sterile filtering of protein solutions, tissue culture media and additives

Product Code	Description	Membrane Diameter (mm)	Membrane Material	Pore Size (µm)	Housing Material	Flow Rate (ml/min)	Residual Volume (ml)	Inner Pack Qty	Case Qty
2012-003	Syringe filter	3	CA	0.22	PP	0.5	0.01	1	50
2032-013	Syringe filter	13	CA	0.22	PP	12.0	0.07	1	50
2052-025	Syringe filter	25	CA	0.22	ACS	61.2	0.21	1	50
2053-025	Syringe filter	25	CA	0.45	ACS	94.6	0.21	1	50
2132-050	Syringe filter	50	CA	0.22	PP	170.0	1.00	1	10
2055 033	Syringe filter	33	PES	0.22	ACS	175.0	0.10	1	50

Flasks, Tissue Culture Treated, Two-Position Cap

- Features a special tissue culture surface treatment that ensures optimum cell anchorage and growth
- Manufactured from clear, premium grade, non-toxic, virgin polystyrene
- Assured sterile by gamma irradiation and certified non-pyrogenic to less than 0.5EU/ml
- Each flask is pressure tested to ensure leak free performance
- Two-position cap enables an airtight seal or manual venting
- The wide neck design allows easy pipetting and cell scraping on all flask sizes
- Moulded graduations facilitate accurate filling
- Anti-tilt skirts, stacking rims and feet for extra stability
- Resealable inner packaging to protect unused product
- Lot number etched into 25, 75 and 150cm² product to ensure complete traceability

Product Code	Description	Surface Area (cm²)	Neck	Capacity (ml)	Inner Pack Qty	Case Qty
3100-025	Tissue culture flask	25	Canted	70	10	300
3102-025	Tissue culture flask, slim	25	Canted	60	10	300
3110-075	Tissue culture flask	75	Canted	270	5	100
3120-150	Tissue culture flask	150	Canted	600	5	40
3160-225	Tissue culture flask	225	Straight	900	5	25

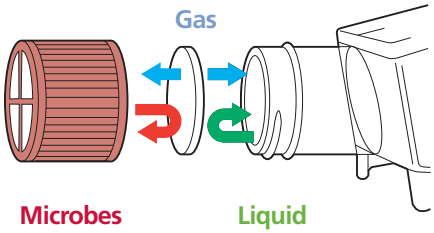
Accessory cell scraper available, please refer to page 79 product code 9010-320

For our extensive range of substrate coated products please refer to pages 80 & 81

Flasks, Tissue Culture Treated, Filter-Vented Cap

- Filter vented caps feature a 0.2µm hydrophobic membrane that eliminates bacterial and fungal contamination
- Manufactured from clear, premium grade, non-toxic, virgin polystyrene
- Assured sterile by gamma irradiation and certified non-pyrogenic to less than 0.5EU/ml
- Each flask is pressure tested to ensure leak free performance
- The wide neck design allows easy pipetting and cell scraping on all flask sizes
- Moulded graduations facilitate accurate filling
- Anti-tilt skirts, stacking rims and feet for extra stability
- Resealable inner packaging to protect unused product
- Lot number etched into 25, 75 and 150cm² product to ensure complete traceability
- Suitable for cultures requiring constant gas exchange with the cap fully sealed
- Ideally suited for use in $C0_2$ incubators
- Features a special tissue culture surface treatment that ensures optimum cell anchorage and growth
- Each flask is supplied in sterile, easy to open, resealable packaging

Vented Cap



Product Code	Description	Surface Area (cm²)	Neck	Capacity (ml)	Inner Pack Qty	Case Qty
3103-025	Tissue culture flask	25	Canted	70	10	300
3113-025	Tissue culture flask, slim	25	Canted	60	10	300
3123-075	Tissue culture flask	75	Canted	270	5	100
3133-150	Tissue culture flask	150	Canted	600	5	40
3143-225	Tissue culture flask	225	Straight	900	5	25

Flasks, Non-Treated, Two-Position Cap

- Hydrophobic surface ideally suited for hybridoma and suspension cell cultures
- Manufactured from clear, premium grade, non-toxic, virgin polystyrene
- Assured sterile by gamma irradiation and certified non-pyrogenic to less than 0.5EU/ml
- Each flask is pressure tested to ensure leak free performance
- Two-position cap enables an airtight seal or manual venting
- The wide neck design allows easy pipetting and cell scraping on all flask sizes
- Accurate graduations are moulded into each flask facilitating filling
- Anti-tilt skirts, stacking rims and feet for extra stability
- Small inner pack sizes with resealable packaging to protect unused product
- Lot number etched into 25, 75 and 150cm² product to ensure complete traceability

Product Code	Description	Surface Area (cm²)	Neck	Capacity (ml)	Inner Pack Qty	Case Qty
1100-025	Tissue culture flask	25	Canted	70	10	300
1110-075	Tissue culture flask	75	Canted	270	5	100
1160-225	Tissue culture flask	225	Straight	900	5	25

Non treated flasks have a white cap for ease of identification. Outer packaging is also clearly marked 'NON TREATED'

Glass Based, Dishes

AS RECOMMENDED BY Leica

- Glass or quartz coverslip attached to the base of a 35mm polystyrene dish with non-toxic silicone adhesive
- Specifically designed for the fluorescent measurement of live and dead cells at a higher magnification than that achievable through plastic dishes
- Quartz based dishes allow higher transmittance and measurement of lower fluorescence
- Ideal for confocal laser microscope studies
- Glass/quartz thickness 0.175 +/- 0.02mm
- Supplied sterile

Product Code	Description	Base Material	Coverslip Diameter (mm)	Sterility	Inner Pack Qty	Case Qty
3900-035	Quartz based dish	Quartz	27	EO	1	50
3901-035	Quartz based dish	Quartz	12	EO	1	50
3930-035	Glass based dish	Glass	27	EO	1	20
3931-035	Glass based dish	Glass	12	EO	1	20

Transmittance

Material	Wavelength (nm)			
	200	300	350	400
Quartz	90.9	91.6	92.3	93.2
Glass	0.0	12.9	89.2	90.0

Fluorescence (Relative value); Excitation wavelength 340 mm

Material	Wavelength (nm)						
	380	400	420	440	460	480	500
Quartz	5.7	8.6	10.3	6.3	4.0	2.4	2.1
Glass	9.7	16.3	20.1	15.2	12.4	11.5	14.1

i Do not sterilise in autoclave. Do not use with organic solvents

Photograph of confocal microscope courtesy of Leica Microsystems. For more information please go to www.leica-microsystems.com

Glass Based, Assay Plates

AS RECOMMENDED BY Leica

- Specifically designed for studying cellular interactions at the molecular level at a higher magnification than is achievable through plastic plates
- Superior optical clarity over conventional polystyrene alternatives makes them ideal for high transmittance microscope scanning
- Glass thickness 0.175 +/- 0.02mm
- Chimney well design reduces cell-to-cell contamination
- Low fluorescent background and black pigment reduces 'cross-talk'
- Especially suitable for use with confocal microscopy
- Low base design ensures readability of all wells by inverted microscopes
- Designed for applications such as:
  - Receptor-ligand detection through fluorescent probes
  - Cell based assays
  - Low-end sensitivity detections

Product Code	Description	No of Wells	Well Base	Well Capacity (µl)	Growth Area (cm2)	Lid	Sterility	Inner Pack Qty	Case Qty
5882-096	Glass based assay plate	96	Flat	300	0.32	None	NS	5	10
5883-384	Glass based assay plate	384	Flat	120	0.10	None	NS	5	10

i Imaging plane from bottom of plate < 0.5mm. Flatness across focal plane100µm

i Do not sterilise in autoclave. Do not use with organic solvents

I.C.T, S.L.
INSTRUMENTACIÓN CIENTÍFICO TÉCNICA

Glass Based, Culture Plates

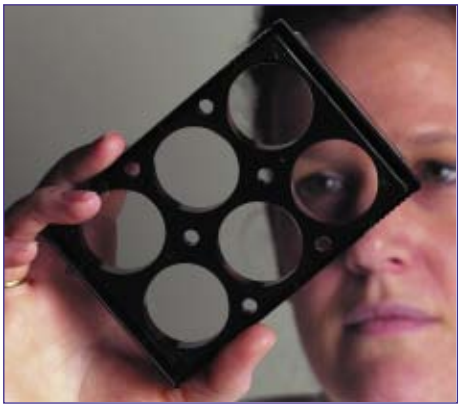
AS RECOMMENDED BY Leica

- Specifically designed for tissue culture applications linked with the observation of cells using confocal microscopy with fluorescent probes and multi point microscopes
- Superior optical clarity over conventional polystyrene alternatives makes them ideal for high transmittance microscope scanning
- Glass thickness 0.175 +/- 0.02mm
- Chimney well design reduces well to well contamination
- Low fluorescent background and black pigment reduces 'cross-talk'
- Especially suitable for use with confocal microscopy
- Supplied sterile

Product Code	Description	No of Wells	Well Base	Colour	Lid	Growth Area (cm^2)	Sterility	Inner Pack Qty	Case Qty
5816-006	Glass based culture plate	6	Flat	Black	Yes	1.90	EO	1	10
5826-024	Glass based culture plate	24	Flat	Black	Yes	0.76	EO	1	10
5866-096	Glass based culture plate	96	Flat	Black	Yes	0.33	EO	1	10

i Do not sterilise in autoclave. Do not use with organic solvents

i For our extensive range of substrate coated glass based culture plates please refer to pages 80 & 81



I.C.T, S.L.
INSTRUMENTACIÓN CIENTÍFICO TÉCNICA

Multiwell Plates, Tissue Culture Treated

- Manufactured from premium grade virgin polystyrene
- Assured sterile by gamma irradiation and certified non-pyrogenic to less than 0.5EU/ml
- Suitable for single cell isolation through cell culture scale up
- Special surface treatment for optimal cell attachment and growth
- Raised well rims and chimney well design greatly reduce the risk of cross contamination
- Non-reversible lids minimising contamination from condensation
- Each well is alphanumerically labelled

Product Code	No of Wells	Well Base	Lid	Well ID x Depth (mm)	Well Capacity (ml)	Growth Area (cm^2)	Inner Pack Qty	Case Qty
3810-006	6	Flat	Yes	34.6 x 17.5	16	9.4	1	50
3815-012	12	Flat	Yes	22.1 x 17.5	6.5	3.8	1	50
3820-024	24	Flat	Yes	15.5 x 17.3	3.4	2.0	1	50
3830-048	48	Flat	Yes	11.2 x 17.1	1.76	0.98	1	50
3860-096	96	Flat	Yes	6.4 x 10.8	0.35	0.32	1	50
3861-096	96	Flat	Yes	6.4 x 10.8	0.35	0.32	10	50
3870-096	96	Round	Yes	6.9 x 10.8	0.35	-	1	50

i Pre-bar coded plates are available to special order. Please contact our Customer Service Department for further details

i Accessory cell scraper available for 6, 12 and 24 well plates. Please refer to page 79, product code 9000-220

i For our extensive range of substrate coated multiwell plates, please refer to pages 80 & 81

Multi-Well Plates, Non-Treated

- Ideal for hybridoma or lymphocyte culture
- Manufactured from premium grade virgin polystyrene
- Assured sterile by gamma irradiation and certified non-pyrogenic to less than 0.5EU/ml
- Suitable for single cell isolation through to cell culture scale up
- Raised well rims and chimney well design greatly reduce the risk of cross contamination
- Non-reversible lids minimising contamination from condensation
- Each well is alphanumerically labelled

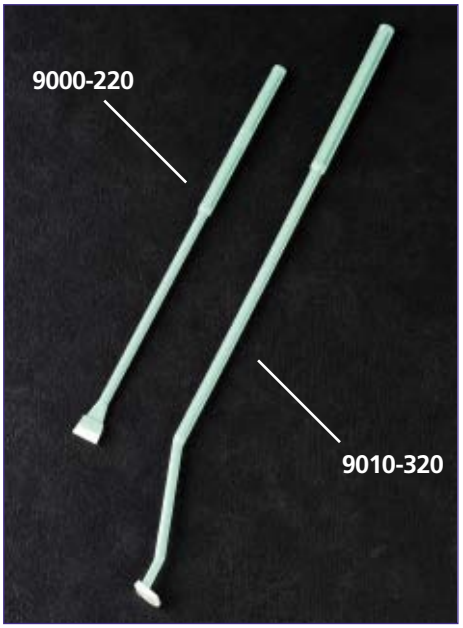
Product Code	No of Wells	Well Base	Lid	Well ID x Depth (mm)	Well Capacity (ml)	Growth Area (cm^2)	Inner Pack Qty	Case Qty
1820-024	24	Flat	Yes	15.5 x 17.3	3.4	2.0	1	50
1830-048	48	Flat	Yes	11.2 x 17.1	1.76	0.98	1	50
3875-096	96	Round	No	6.9 x 10.8	0.35	-	1	50

Pre-bar coded plates are available to special order. Please contact our Customer Service Department for further details

Pipettes

For a full range of pipettes for tissue culture please refer to page 37

Scrapers



- For the mechanical harvesting of cells
- Gentle silicone rubber blades
- Flask scraper with rotating blade for corners, for use with 75, 150 and 225cm^2 flasks
- Dish scraper with fixed blade for 6, 12 and 24 well plates and dishes

Product Code	Description	Blade Width x Length (mm)	Materials (Blade/Shaft)	Sterility	Inner Pack Qty	Case Qty
9000-220	Cell scraper for plates and dishes	11 x 220	Silicone Rubber/ABS resin	IRR	1	100
9010-320	Cell scraper for flasks	12 x 320	Silicone Rubber/ABS resin	IRR	1	100

Substrate Coated Products

- Iwaki protein substrate coated products promote differentiation of cultured cells
- The range supports both endothelial and exothelial cell growth
- Choice of Collagen, Poly-L-Lysine, Poly-Ethylene-Imine, Fibronectin, or Gelatin coated flasks, dishes and multiwell plates
- No refrigeration required
- All products are expiry dated

Storage temperature of all substrate coated products should not be higher than 25°C
Avoid storage in areas of high humidity

Rapid temperature changes and exposure to UV irradiation may reduce the shelf life of the products

Collagen Type 1 Coated Products

- Collagen Type 1 coated ware promotes excellent growth in the culturing of human keratinocytes, rat liver cells and mouse dorsal root ganglia neuron in serum free media
- Source - pig tendon
- Improves survival of primary cell cultures
- Improves cell attachment and increases cell proliferation rate for a variety of mammalian cells
- Suitable for the following applications:
  - Cell adhesion assays
  - Studies of effect of Collagen Type 1 on cells

Product Code	Description	Sterility	Inner Pack Qty	Case Qty
4000-010	Dish, 35mm	AS	10	200
4010-010	Dish, 60mm	AS	10	200
4020-010	Dish, 100mm	AS	10	120
4030-010	Dish, 150mm	AS	5	10
4810-010	Plate, 6 well	AS	1	20
4815-010	Plate, 12 well	AS	1	20
4820-010	Plate, 24 well	AS	1	20
4860-010	Plate, 96 well	AS	1	20
4100-010	Flask, 25cm^2	AS	10	60
4110-010	Flask, 75cm^2	AS	5	10
4160-010	Flask, 225cm^2	AS	5	10
4816-010	Glass based culture plate, 6 wells	AS	1	10
4826-010	Glass based culture plate, 24 wells	AS	1	10
4866-010	Glass based culture plate, 96 wells	AS	1	10

Fibronectin Coated Products

- Fibronectin coated dishes are suitable for culturing fibroblasts, hepatocytes and nerve cells in serum free media
- Source – fetal plasma
- Promotes cell attachment and proliferation

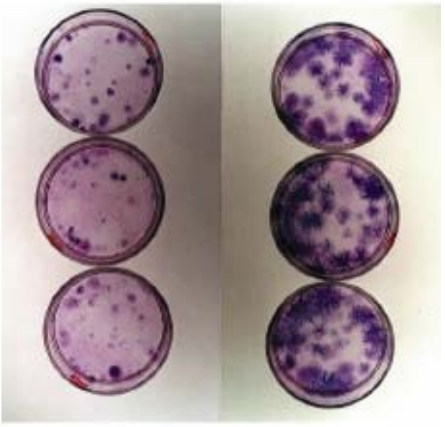
Product Code	Description	Sterility	Inner Pack Qty	Case Qty
4000-030	Dish, 35mm	AS	10	60
4010-030	Dish, 60mm	AS	10	40
4020-030	Dish, 100mm	AS	10	40

Gelatin Coated Products

- Improves cell attachment
- Source – pig skin
- Ideal for primary cultures of myoblasts, liver cells or human endothelial cells

Product Code	Description	Sterility	Inner Pack Qty	Case Qty
4000-020	Dish, 35mm	AS	10	200
4010-020	Dish, 60mm	AS	10	200
4020-020	Dish, 100mm	AS	10	120
4810-020	Plate, 6 well	AS	1	20
4815-020	Plate, 12 well	AS	1	20
4820-020	Plate, 24 well	AS	1	20
4860-020	Plate, 96 well	AS	1	20
4100-020	Flask, 25cm^2	AS	10	60

Non Coated Dish **Gelatin Coated Dish**



Chick Myoblasts

Poly–L–Lysine Coated Products

- Suitable for primary culture of neuronal cells and transfected cell lines
- Source - chemically synthetic amino acid
- Suitable applications include:
  - Attachment and proliferation of a variety of cell lines
  - Cell differentiation and neurite outgrowth
  - Improving survival of primary neurons in culture

Product Code	Description	Sterility	Inner Pack Qty	Case Qty
4000-040	Dish, 35mm	AS	10	200
4010-040	Dish, 60mm	AS	10	200
4020-040	Dish, 100mm	AS	10	120

Poly-Ethylene Imine Coated Products

NEW

- Particularly suitable for primary culture of neurons
- Source – chemically synthetic amino acid
- Suitable applications include:
  - -Attachment and spreading of a variety of cell lines
  - -Cell differentiation and neurite outgrowth
  - -Improving survival of primary neurons in culture

Product Code	Description	Sterility	Inner Pack Qty	Case Qty
4816-060	Glass based culture plate, 24 well	AS	1	10
4826-060	Glass based culture plate, 48 well	AS	1	10
4866-060	Glass based culture plate, 96 well	AS	1	10

For more information on the suitability of different cell types on each substrate coated product, please refer to page 85 of the Technical Information section

Thin Collagen Gel Membrane

- Novel Scaffold for three dimensional cell culture
- Uniform 20µm (re-hydrated) membrane attached to nylon ring to maintain structure
- Transparent, allowing for easy microscopic observation
- Enhanced gel strength enabling easy handling
- Excellent permeability enabling cell-cell interactions cultured on opposite sides of the membrane

Product Code	Description	OD (mm)	Diameter of Transparent Area (mm)	Material Membrane/ Ring	Sterility	Inner Pack Qty	Case Qty
VIT-C001	Thin Collagen Gel Membrane	33	24	Collagen Gel/ Nylon	IRR	1	6

Tubes, Culture

For a full range of glass culture tubes please refer to pages 63 & 64

For a full range of plastic culture tubes please refer to page 64

Tubes, Centrifuge, 15ml

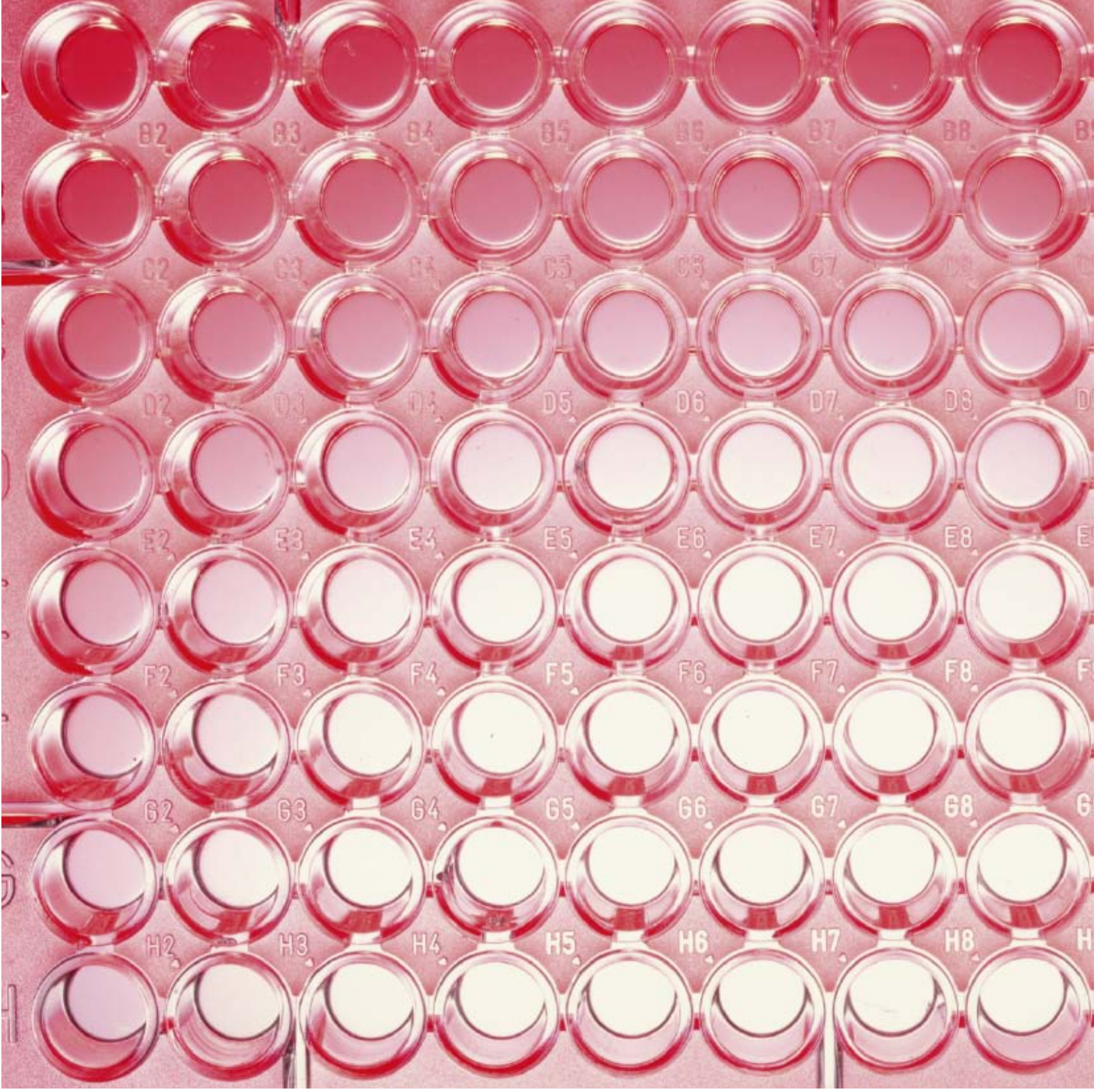
- Recommended RCF values:
  - Polypropylene 15ml centrifuge tubes 9,400 x g
  - Polystyrene 15ml centrifuge tubes 1,800 x g
- Manufactured from clear polystyrene or opaque polypropylene
- Printed graduations and flat top triple sealed, HDPE cap
- Assured sterile by gamma irradiation and certified non-pyrogenic (<0.5EU/ml)
- Available in racks or convenient, easy to open re-sealable bulk packaging

Product Code	Description	Capacity (ml)	Racked/ Bulk	Material Base/Cap	Sterility	Inner Pack Qty	Case Qty
2322-015	Centrifuge tube	15	Racked	PS/HDPE	IRR	50	500
2324-015	Centrifuge tube	15	Bulk	PS/HDPE	IRR	25	500
2323-015	Centrifuge tube	15	Racked	PP/HDPE	IRR	50	500
2325-015	Centrifuge tube	15	Bulk	PP/HDPE	IRR	25	500

Tubes, Centrifuge, 50ml

- Recommended RCF values:
  - Polypropylene 50ml centrifuge tubes 9,400 x g
  - Polystyrene 50ml centrifuge tubes 1,500 x g
- Manufactured from clear polystyrene or opaque polypropylene
- Printed graduations and flat top, triple sealed, HDPE cap
- Assured sterile by gamma irradiation and certified non-pyrogenic (<0.5EU/ml)
- Available in racks or convenient, easy to open, re-sealable bulk packaging

Product Code	Description	Capacity (ml)	Racked/ Bulk	Material Base/Cap	Sterility	Inner Pack Qty	Case Qty
2342-050	Centrifuge tube	50	Racked	PS/HDPE	IRR	25	300
2344-050	Centrifuge tube	50	Bulk	PS/HDPE	IRR	10	300
2343-050	Centrifuge tube	50	Racked	PP/HDPE	IRR	25	300
2345-050	Centrifuge tube	50	Bulk	PP/HDPE	IRR	10	300



Technical Information

1. Abbreviations

ABS	Acrylonitrile Butadiene Styrene
ACS	Acrylonytrylstylene co-polymer
AL	Aluminium
AS	Aseptic Manufacture
CA	Cellulose Acetate
Dia	Diameter
EO	Ethylene Oxide
ID	Internal Diameter
IRR	Irradiated for Sterility
G	Glass
M	Metal, Tin Plate
NS	Non Sterile
OD	Outer Diameter
OH	Overall Height
PE	Polyethylene
PES	Polyethersulfone
PETG	Polyethylene Tetraphthalate
PMMA	Polymethyl Methacrylate
PP	Polypropylene
PS	Polystyrene
W	Wire, Epoxy Coated

2. Bags, Autoclave

(cat page 2)

Recommendations for use:

- Vessels containing liquid should not be plugged or capped
- Do not put sharp objects such as broken glassware into an autoclave bag
- Add some water to bags of solid waste. The water will vapourise into steam and will drive out residual air once sterilisation temperature has been reached inside the bag
- Do not tightly seal the bag as this will prevent air escaping during the sterilisation process
- Do not overload autoclave. Leave sufficient room for thorough steam circulation
- For the decontamination and inactivation of particularly resistant biological waste, use High Temperature bags and autoclave at 135°C

3. Bags, Metal Closure

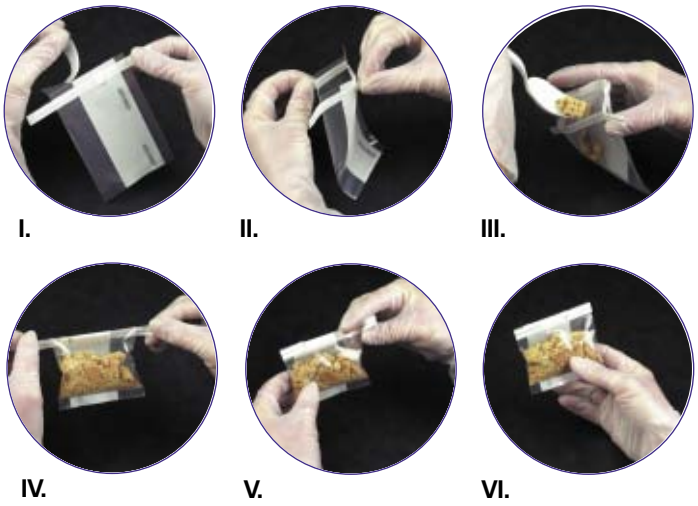
(cat page 3)

Method of Use

I. Tear off top of bag along perforation
II. Use pull tabs to open bag
III. Place sample in bag
IV. Hold bag by wire ends and whirl three times to close (whirling the bag will form the tightest seal) or fold the tab over tightly three times to close (folding the tab should be used for larger bags)
V. Bend wire ends onto bag to ensure bag remains closed
VI. Sample contained in bag

To re-open the bag:

- Bend the wire ends away from the bag
- Unroll the tab
- Use pull tabs to open



4. Cell Biology, Treated Products

(cat pages 72, 75, 76, 78)

The Iwaki TC treated products (flasks, dishes, multiwells) undergo a special tissue culture treatment to enable them to support cell growth on their surfaces. This is primarily a treatment that makes the surface of the vessel hydrophobic and thus enhances cell attachment.

5. Cell Biology, Working Volumes

The following volumes are a general guideline only.

Customers should decide the media volume required dependant on the cell line being used

	Recommended Working Media Volume (ml)
Culture Dishes	
35 mm	2.0 - 3.0
60 mm	4.0 - 6.0
100 mm	10.0 - 15.0
150 mm	40.0 - 50.0
Multi Well Plates	
6 wells	2.0 - 3.0
12 wells	1.5 - 2.2
24 wells	0.5 - 1.0
48 wells	0.5 - 0.8
96 wells	0.1 - 0.2
Culture Flasks	
25 cm^2	5.0 - 7.5
25 cm^2 slim	5.0 - 7.5
75 cm^2	15 - 30
150 cm^2	40 - 50
225 cm^2	45 - 75

6. Cell Biology, Substrate Coated Products

(cat pages 80 & 81)

A problem that can occur when attempting to culture cells in-vivo is encouraging them to grow and proliferate on a plastic or glass base rather than on macromolecular connective tissue, which would bind them together in-vivo. This connective tissue, known as the extra cellular matrix, generally consists of proteins, polysaccharides and proteoglycans. To help combat this problem Iwaki have developed a range of tissue culture products coated with components of the extra cellular matrix. When placed in contact with these proteins, cells that are usually difficult to nurture in artificial environments:

- Show improved cell attachment and growth
- Exhibit lower requirements for serum
- Produce a monolayer of cells needed to show a cytopathic effect

This range also has significant other benefits over non-coated TC products or in-house coated product when the need to culture 'difficult' cells arises, namely:

- Saves time
- Ensures reproducibility
- Consistency in results

a) Collagen Type I

Collagen type I is found in most tissues and organs, but can be found mainly in dermis, bone and tendons. As an integral part of the overall framework that holds cells and tissues together it has been recognised as a useful matrix for enhancing cell culture. The in vitro use of collagen can improve cell attachment and increase proliferation rates for a variety of normal and transformed mammalian cell types

Collagen source – pig tendon

Storage should be at room temperature (not higher than 25°C)

Avoid storage in areas of high humidity

Rapid temperature changes and exposure to UV irradiation may reduce the shelf life of the product.

Suitable cell types include:

- Endothelial Cells
  - Primary human umbilical vein endothelial cells (HUVEC)
  - Foetal bovine heart endothelial cells (FBHE)
  - Primary porcine aortic endothelial cells
- Hepatocytes
  - Primary rat hepatocytes
  - Primary human hepatocytes
  - HepG2 cells
- Muscle Cells
  - Chick embryo myocytes and myoblasts
  - Rat myocytes and myoblasts
  - Skeletal muscle cells
  - Rat smooth muscle cells
  - Quail myoblasts
  - Human smooth muscle cells
  - Rat primary cardiomyocytes
  - Transfected MM41 skeletal myoblasts
- Rat PC12 Cells
- Other Cell Types
  - Transfected CHO cells
  - MDA-MB 435 tumour cells

b) Fibronectin

Fibronectin exists in the plasma (as a dimer) and in the extracellular matrix and on cell surfaces (in multimeric form). Its main function is cell adhesion to the extracellular matrix that occurs through an interaction of its cell binding domain with fibronectin-specific cell surface receptors. Other domains of fibronectin also interact with collagen, heparin and cell surface glycosaminoglycans. It can promote the cell attachment, proliferation, differentiation and spreading of many cell types, especially fibroblasts.

Fibronectin source – foetal plasma

Storage should be at room temperature (not higher than 25°C)

Avoid storage in areas of high humidity

Rapid temperature changes and exposure to UV irradiation may reduce the shelf life of the product

Suitable cell types include:

- Fibroblasts
  - Hamster kidney cells, BHK-21
- Endothelial Cells
  - Capillary endothelial cells
  - Human umbilical vein endothelial cells
  - Microvascular endothelial cells
- Nerve Cells
  - Neuroblastoma cells
- Other Cell Types
  - Monocytes
  - 3T3 Preadipose cells
  - Human myeloma cell lines

c) Gelatin

Gelatin is derived through the hydrolysis of collagen to produce a heterogeneous mixture of water-soluble proteins. It can be used to enhance the attachment of a wide variety of both normal and transfected cell types

Gelatin source – pig skin

Storage should be at room temperature (not higher than 25°C).

Avoid storage in areas of high humidity

Rapid temperature changes and exposure to UV irradiation may reduce the shelf life of the product

Suitable cell types include:

- Vascular Endothelial Cells
  - Primary human umbilical vein endothelial cells (HUVEC)
- Embryonic Stem Cells
- Muscle Cells
- F9 Teratocarcinoma Cells

d) Poly-L-Lysine and Poly-Ethylene-Imine

These are chemically synthetic molecules used to enhance cell attachment by altering the charge on the surface of the tissue culture treated vessel from negative to positive. Poly-L-Lysine has been found to be especially effective when using serum free or serum reduced cultures where it also enhances the adsorption of serum or extracellular matrix proteins to the culture substrate. Both are suitable for the primary culture of nerve cells. Poly-Ethylene-Imine is especially suited for the primary culture of cells associated with the central nervous system.

Storage should be at room temperature (not higher than 25°C)

Avoid storage in areas of high humidity

Rapid temperature changes and exposure to UV irradiation may reduce the shelf life of the product

Suitable cell types include:

- Primary Neurons
  - Cerebellar granule
  - Cerebral cortex
  - Sympathetic neurons
  - Sciatic nerve
  - Cortical neurons
  - Spinal cord neurons
  - Septal neurons
  - Dorsal root ganglia
- Neuronal Cell Lines
- Glial Cells
- Transfected Cell Lines

Application	Collagen Type I	Fibronectin	Gelatin	PLL / PEI
Promotion of cell attachment and spreading	√	√	√ √	
nd transfected F9 teratocarcinoma cells for gene expression				
Culture and promote proliferation of Human Umbilical Vein Endothelial Cells (HUVEC)	√	√	√	
Cell differentiation and neurite outgrowth				√
Attachment of fastidious transfected cell lines			√	
Support survival of primary primary neurons in culture			√	

8. Chemical Resistance and Physical Properties of Polymers

Excellent resistance, can withstand use over a long period of time without change

Good resistance, minor attack may occur over long periods of storage

Limited resistance, moderate attack, product can be used for brief mixing and measuring

Poor resistance, product becomes unstable on contact with chemical

TL Translucent

C Clear

	PS	PP	LDPE	HDPE	PETG
Acids-dilute					
Acids-concentrated					
Alcohols					
Aldehydes					
Bases					
Chloroform					
Esters					
Formaldehyde					
Hydrocarbons-aliphatic					
Hydrocarbons-aromatic					
Hydrocarbons-halogenated					
Ketones					
Oils, mineral					
Oils, vegetable					
Oxidising agents					

	PS	PP	LDPE	HDPE	PETG
Max Temp °C	70	135	80	120	60
Min Temp °C	-40	0	-50	-100	-80
Autoclavable	NO	YES	NO	NO	NO
Gamma Irradiation Sterilisation	YES	NO	YES	YES	YES
Transparency	C	TL	TL	TL	C
mm cm^3/cm^2 sec (cm Hg) x 10^{10} Gas Permeability N_2	3	4.4	20	3	0.8
Gas Permeability CO_2	75	92	280	45	4.5
Gas Permeability 0_2	15	28	60	10	1.1
Water Absorption %	0.05	<0.02	<0.01	<0.01	<0.1

Key to abbreviations

(PS) Polystyrene

(PP) Polypropylene

(LDPE) Low density polyethylene

(HDPE) High density polyethylene

(PETG) Polyethylene Tetraphthalate

This chemical resistance chart and table of physical properties is intended for general guidance only. We recommend that users satisfy themselves as to the compatibility between containers and proposed contents before use.